

In the claims:

All of the claims standing for examination are presented below with appropriate status indication. New claims are added.

1 – 22. (Cancelled)

23. (Currently amended) A language-processing system comprising:

a computerized appliance having user input and output interfaces, one or more processors, and ~~one or more~~ a machine computer-readable media medium for storing and executing operating code accessible to the one or more processors; and

operating code executed by the one or more processors from the ~~one or more machine computer-readable media medium~~ for processing text and audio messages;

wherein text and audio messages input to the system are separated into words and phrases to be considered individually, meaning is determined for individual ones of the words and phrases, resulting in statements of meaning, and the resulting meaning statements are linked, providing meaning for the message.

24. (Previously presented) The system of claim 23 wherein logically false and meaningless input messages are identified by the nature of the linked meaning statement.

25. (Previously presented) The system of claim 23 wherein ambiguous input messages are made clear by the nature of the linked meaning statement.

26. (Previously presented) The system of claim 23 further comprising a situation model updated as language is processed.

27. (Cancelled)

28. (Previously presented) The system of claim 26 wherein conflicts between the linked

meaning statement and the situation model are detected and reported to the user.

29. (Previously presented) The system of claim 26 wherein the system is used in control situations, and wherein detection of conflicts are used to predict future or developing risk.

30. (Previously presented) The system of claim 23 wherein the system finds unlinkable meaning statements, and reports the unlinkable statements to an external entity.

31. (Previously presented) The system of claim 23 for control of technical systems, including robotic systems, further comprising a virtual realizer recognizing meaning of the linked meaning statements for generating commands for the technical systems.

32. (Previously presented) The system of claim 28 wherein the system is used in taxiway control for airports.

33. (Previously presented) The system of claim 26 wherein meaning is applied to measured values, and these meanings are applied to the situation model.

34. (Previously presented) The system of claim 26 further comprising an artificial language intelligence (ALI) module having cognitive routines of various classes, including routines for extraction of meaning, context-bound modification, context-bound association, and logical inferences, the ALI module making the routines available to the extractor-and other modules of the system.

35. (Currently amended) A method, executing from a digital storage ~~media~~ medium in a computing appliance, for language processing, comprising the steps of:

(a) extracting individual words and phrases from a message input as either voice or text;

(b) determining meaning for individual ones of the words and phrases, resulting in meaning statements; and

(c) linking the extracted meaning statements, providing a linked meaning statement.

36. (Previously presented) The method of claim 35 including a further step for identifying logically false and meaningless statements.

37. (Previously presented) The method of claim 35 wherein ambiguous input messages are identified by the nature of the linked meaning statement.

38. (Previously presented) The method of claim 35 further comprising a step for updating a situation model as language is processed.

39. (Cancelled)

40. (Previously presented) The method of claim 38 comprising a step for reporting conflicts between the linked meaning statement and the situation model to a user.

41. (Previously presented) The method of claim 38 including a step for predicting future or developing risk in control situations.

42. (Previously presented) The method of claim 35 including a step for reporting unlinkable meaning statements to an external entity.

43. (Previously presented) The method of claim 35 including a step for recognizing meaning of the linked meaning statements, which are then used by the system for generating commands for the technical systems.

44. (Previously presented) The method of claim 38 used in taxiway control for airports.

45. (Previously presented) The method of claim 38 wherein meaning is applied to measured values, and these meanings are applied to the situation model.

46. (Previously presented) The method of claim 38 further comprising steps for providing, by an artificial language intelligence (ALI) module, cognitive routines of various classes, including routines for extraction of meaning, context-bound modification, context-bound association, and logical inferences, to the extractor and other modules of the system.

47. (New) A system for automatically recognizing and further processing meaning of a linguistically provided information, comprising:

- an extractor which extracts a concept and a concept category from a knowledge base for each word contained in said linguistically provided information, wherein each extracted concept corresponds to the isolated meaning of one of the words;

- a connector which connects the extracted concepts to obtain a reconstructed meaning of said linguistically provided information;

- wherein:

- an artificial language intelligence is provided which coordinates an information exchange between the connector and the knowledge base, and which contains a pool of cognitive routines;

- the connector first transmits a request code to the artificial language intelligence, the request code containing at least information regarding the connector and the extracted concept categories to be processed;

- the artificial language intelligence subsequently processes the request code, thereby selecting a cognitive connection routine from the pool of cognitive routines, said cognitive connection routine determined by the combination of information contained in the request code, extracts information from the knowledge base in consideration of the extracted concept categories to be processed, and transmits the cognitive connection routine and the information extracted from the knowledge base to the connector; and

- the connector connects the extracted concepts in consideration of said cognitive connection routine and said information extracted from the knowledge base.

48. (New) The system according to claim 47, comprising a feedback module, wherein concepts for which no linking is accomplished are conveyed to the feedback module, which brings them to the attention of a user of the system.

49. (New) The system according to claim 47, comprising a feedback module, wherein concepts which are contained in said information extracted from the knowledge base and which are added to the linguistically provided information by the connector, are conveyed to the feedback module which brings them to the attention of a user of the system.

50. (New) The system according to claim 48, wherein the feedback module initiates a query after receiving said unlinkable or added concepts.

51. (New) The system according to claim 49, wherein the feedback module initiates a query after receiving said unlinkable or added concepts.

52. (New) . The system according to claim 48, wherein the linguistically provided information is evaluated as a meaningless statement if the quantity of unlinked concepts exceeds a predefined number.

53. (New) The system according to claim 47 wherein unfamiliar concepts are deposited via a learning module in the knowledge base.

54. (New) The system according to claim 47, wherein a meaningfully reconstructed meaning of said linguistically provided information is conveyed to a conflict module, wherein the conflict module compares the reconstructed meaning of said information with the current situation context contained in a situation module, which is part of the knowledge base, by using an appropriate comparison routine.

55. (New) The system according to claim 53, wherein:

the conflict module first transmits a request code to the artificial language intelligence, the request code containing at least information regarding the conflict module, the extracted concept categories to be processed and the situation module;

the artificial language intelligence subsequently processes the request code, thereby selecting a cognitive comparison routine from the pool of cognitive routines, said cognitive comparison routine determined by the combination of information contained in the request code, extracts information from the situation module in consideration of the extracted concept categories to be processed;

transmits the cognitive comparison routine and the information extracted from the situation module to the conflict module; and

the conflict module compares the reconstructed meaning of said linguistically provided information with said information extracted from the situation module in consideration of said cognitive comparison routine.

56. (New) The system according to claim 54, comprising a feedback module, wherein a valid reconstructed meaning of said linguistically provided information that can nevertheless not be realized on the basis of the current situation is recognized by the conflict module and is transferred to the feedback module which brings it to the attention of a user of the system.

57. (New) The system according to claim 55, comprising a feedback module, wherein a valid reconstructed meaning of said linguistically provided information that can nevertheless not be realized on the basis of the current situation is recognized by the conflict module and is transferred to the feedback module which brings it to the attention of a user of the system.

58. (New) The system according to claim 54, wherein a meaning of said linguistically provided information, which is possible in the current situation context, is subjected to a risk analysis by an expertise module, wherein the expertise module compares the reconstructed meaning of said linguistically provided information with expert knowledge

contained in a expert knowledge module, which is part of the knowledge base, by using an appropriate comparison routine.

59. (New) The system according to claim 55, wherein a meaning of said linguistically provided information, which is possible in the current situation context, is subjected to a risk analysis by an expertise module, wherein the expertise module compares the reconstructed meaning of said linguistically provided information with expert knowledge contained in a expert knowledge module, which is part of the knowledge base, by using an appropriate comparison routine.

60. (New) The system according to claim 58, wherein:

the expertise module first transmits a request code to the artificial language intelligence, the request code containing at least information regarding the expertise module, the extracted concept categories to be processed and the expert knowledge module;

the artificial language intelligence subsequently processes the request code, thereby selecting a cognitive comparison routine from the pool of cognitive routines, said cognitive comparison routine determined by the combination of information contained in the request code, extracts information from the expert knowledge module in consideration of the extracted concept categories to be processed, and transmits the cognitive comparison routine and the information extracted from the expert knowledge module to the expertise module; and

the expertise module compares the reconstructed meaning of said linguistically provided information with said information extracted from the expert knowledge module in consideration of said cognitive comparison routine.

61. (New) The system according to claim 59, wherein:

the expertise module first transmits a request code to the artificial language intelligence, the request code containing at least information regarding the expertise

module, the extracted concept categories to be processed and the expert knowledge module;

the artificial language intelligence subsequently processes the request code, thereby selecting a cognitive comparison routine from the pool of cognitive routines, said cognitive comparison routine determined by the combination of information contained in the request code, extracts information from the expert knowledge module in consideration of the extracted concept categories to be processed, and transmits the cognitive comparison routine and the information extracted from the expert knowledge module to the expertise module; and

the expertise module compares the reconstructed meaning of said linguistically provided information with said information extracted from the expert knowledge module in consideration of said cognitive comparison routine.

62. (New) The system according to claim 60, comprising a feedback module, wherein a valid reconstructed meaning of said linguistically provided information that can nevertheless not be realized on the basis of the information extracted from the expert knowledge module are recognized by the expertise module and are transferred to the feedback module which brings them to the attention of a user of the system.

63. (New) The system according to claim 61, wherein a valid reconstructed meaning of said linguistically provided information is processed via a virtual realization module.

64. The system according to claim 63, the virtual realization module comprising a modification module which establishes any changes that are connected with the reconstructed meaning of said linguistically provided information and transmits them to the situation module for updating the latter in an ongoing manner.

65. (New) The system according to claim 63, the virtual realization module comprising an anticipation module. wherein the anticipation module anticipates consequences of actions and events contained in the reconstructed meaning of said linguistically provided

information in consideration of world knowledge contained in a world knowledge module, which is part of the knowledge base, by using an appropriate anticipation routine.

66. (New) The system according to claim 65, wherein;

the anticipation module first transmits a request code to the artificial language intelligence, the request code containing at least information regarding the anticipation module, the extracted concept categories to be processed and the world knowledge module;

the artificial language intelligence subsequently processes the request code, thereby selecting a cognitive anticipation routine from the pool of cognitive routines, said cognitive anticipation routine is determined by the combination of information contained in the request code, extracts potential links to subsequent events for the reconstructed meaning of said linguistically provided information from the world knowledge module, and transmits the cognitive anticipation routine and, if the search is successful, the located links to the anticipation module; and

the anticipation module connects the reconstructed meaning of said linguistically provided information with said links extracted from the world knowledge module in the context-bound manner, by using said cognitive anticipation routine.

67. (New) The system according to claim 65, comprising a feedback module, wherein anticipated subsequent events are conveyed to the feedback module, which brings them to the attention of a user of the system.

68. (New) The system according to claim 66, wherein information made 5 available by the anticipation module is integrated in the situation model contained in the situation module assuring a current updating of the situation model on an ongoing basis.

69. (New) The system according to claim 65, wherein the anticipated events are virtually realized by the virtual realization module, wherein:

the virtual realization module first transmits a request code to the artificial language intelligence, the request code containing at least information regarding the virtual realization module, the extracted concept categories to be processed and the world knowledge module;

the artificial language intelligence subsequently processes the request code, thereby selecting a cognitive virtual realization routine from the pool of cognitive routines, said cognitive virtual realization routine is determined by the combination of information contained in the request code, extracts information from the world knowledge module in consideration of the extracted concept categories to be processed, and transmits the cognitive virtual realization routine and the information extracted from the world knowledge module to the virtual realization module.; and

the virtual realization module virtually realizes the reconstructed meaning of said linguistically provided information in consideration of said cognitive processing routine and said information extracted from the world knowledge module.

70. (New) The system according to claim 47, comprising a command generation module, wherein the reconstructed meaning of said linguistically provided information, after undergoing the virtual realization , is converted by *the* command generation module into control commands for a downstream technical installation or robot.

71. (New) The system according to claim 47, wherein the extractor reduces the linguistically provided information to basic forms.

72. (New) The system according to claim 47, comprising special slots for implementing user-specific expert knowledge, wherein the meaning of a new linguistically provided information is first reconstructed, is then compared with the content of the existing knowledge base, and finally a relevance evaluation is derived by an intelligence module on basis of the expert knowledge in accordance with user-specific criteria.

73. (New) The system according to claim 47, wherein extracted knowledge from the knowledge base is made available in a buffer and is reduced to relevant parts by subroutine.